

What is claimed is:

- 1 1. A system for monitoring and controlling utility-based consumption comprising:
2 a reader for obtaining utility consumption data from a utility meter; and
3 a computer system for collecting the data from the reader wherein the
4 computer system computes a forecast of consumption for one or more
5 predetermined periods of time and wherein the computer system signals for the
6 control of consumption through the controlling of one or more devices that
7 consume utility-based product based on the forecast.
- 1 2. The system according to claim 1, wherein the data is electric power consumption
2 data.
- 1 3. The system according to claim 1, wherein the data is natural gas consumption
2 data.
- 1 4. The system according to claim 1, wherein the data is water consumption data.
- 1 5. The system according to claim 1, wherein the forecast of consumption is based on
2 usage for a portion of the predetermined period of time.
- 1 6. The system according to claim 1, wherein the computer system repeatedly
2 computes the forecast.
- 1 7. The system according to claim 1, wherein the computer system signals for the
2 control the one or more devices so that usage for the predetermined time period falls
3 below a predetermined amount.

1 8. The system according to claim 7, wherein the computer system signals for the
2 control of one or more of the devices through the decreasing of the amount of time that
3 one or more one of the devices run.

1 9. The system according to claim 1, wherein one or more of the devices includes a
2 climate control device.

1 10. The system according to claim 9, wherein the climate control device is an air
2 conditioning unit.

1 11. The system according to claim 7, wherein the predetermined amount represents a
2 baseline above which the cost of electricity increases.

1 12. The system according to claim 7, wherein the predetermined amount represents a
2 target and when usage falls below the target for the predetermined time period the user
3 becomes entitled to a rebate.

1 13. The system according to claim 1, further comprising a user interface at the
2 computer system wherein the user interface displays indicia related to consumption to the
3 user.

1 14. The system according to claim 13, wherein the indicia related to consumption is
2 representative of historical usage.

1 15. The system according to claim 13, wherein the indicia related to consumption is
2 representative of then-current usage in real time.

1 16. The system according to claim 15, wherein the indicia related to consumption
2 includes a moving picture.

1 17. The system according to claim 16, wherein the moving picture includes a chart of
2 usage.

1 18. The system according to claim 1, further comprising means for accessing the user
2 interface from a location remote from the computer system for providing the user input.

1 19. The system according to claim 18, further comprising means for displaying
2 indicia related to power consumption at the remote location.

1 20. The system according to claim 1, wherein the utility company sends the alerts to
2 the computer system to reduce consumption during a crisis situation.

1 21. The system according to claim 1, wherein the utility company communicates with
2 the computer system via the Internet.

1 22. The system according to claim 1, wherein the utility company sends the alerts to
2 the computer system via the Internet.

1 23. The system according to claim 1, wherein the alerts from the utility company are
2 based on forecasts of how much power will be consumed.

1 24. The system according to claim 1, wherein the utility company communicates with
2 the computer system to obtain data on power usage for billing purposes.

1 25. The system according to claim 1, wherein the utility company instructs the
2 computer system to adjust the consumption of one or more devices.

1 26. The system according to claim 1, wherein the reader monitors a value displayed
2 by a seven-segment numeric indicator by monitoring the state of seven segments

3 associated with said indicator and determining the value displayed by said indicator by
4 associating each value that said indicator can display with the state of each segment
5 associated with said indicator.

1 27. The system according to claim 1, wherein the system includes multiple readers for
2 reading utility consumption data from multiple meters and wherein the computer
3 computes the forecast based on the data from multiple ones of the readers.

1 28. A method of monitoring and controlling utility-based consumption comprising:
2 reading consumption data from an utility meter using an automatic reader;
3 collecting the data from the reader in a computer memory device;
4 computing a forecast of consumption for one or more predetermined
5 periods of time using a computer system; and
6 controlling an amount of consumption by the computer system signaling
7 for the control of one or more devices that consume utility-based product based
8 on the forecast.

1 29. The method according to claim 28, wherein the data is electric power
2 consumption data.

1 30. The method according to claim 28, wherein the data is natural gas consumption
2 data.

1 31. The method according to claim 28, wherein the data is water consumption data.

1 32. The method according to claim 28, wherein the forecast of consumption is based
2 on power usage for a portion of the predetermined period of time.

1 33. The method according to claim 28, wherein said controlling controls the one or
2 more devices so that usage for the predetermined time period falls below a predetermined
3 amount.

1 34. The method according to claim 28, wherein the predetermined amount represents
2 a baseline above which cost of the utility supplied product increases.

1 35. The method according to claim 28, wherein the predetermined amount represents
2 a target and when usage falls below the target for the predetermined time period the user
3 becomes entitled to a rebate.

1 36. The method according to claim 28, further comprising displaying indicia related
2 to consumption.

1 37. The method according to claim 36, wherein the indicia related to consumption is
2 representative of historical usage.

1 38. The method according to claim 36, wherein the indicia related to consumption is
2 representative of then-current usage in real time.

1 39. The method according to claim 38, wherein the indicia related to consumption
2 includes a moving picture.

1 40. The method according to claim 39, wherein the moving picture includes a chart of
2 usage.

1 41. The system according to claim 28, wherein the utility company sends the alerts to
2 the computer system to reduce power consumption during a crisis situation.

1 42. The system according to claim 28, wherein the utility company communicates
2 with the computer system via the Internet.

1 43. The system according to claim 28, wherein the utility company sends the alerts to
2 the computer system via the Internet.

1 44. The system according to claim 28, wherein the alerts from the utility company are
2 based on forecasts of consumption.

1 45. The system according to claim 28, wherein the utility company communicates
2 with the computer system to obtain data on power usage for billing purposes.

1 46. The system according to claim 28, wherein the utility company instructs the
2 computer system to adjust the consumption of one or more devices.

1 47. The system according to claim 28, wherein the reader, monitors a value displayed
2 by a seven-segment numeric indicator by monitoring the state of seven segments
3 associated with said indicator and determining the value displayed by said indicator by
4 associating each value that said indicator can display with the state of each segment
5 associated with said indicator.

1 48. The system according to claim 28, wherein said controlling comprises adjusting a
2 thermostat to provide additional cooling during a non-peak use period leading up to a
3 peak use period and further adjusts the thermostat to provide lesser cooling during the
4 peak use period.

1 49. The system according to claim 28, wherein said controlling comprises adjusting
2 the use of one or more devices according to at least one calculated formula agreed to
3 between the consumer and the utility.

- 1 50. A system for monitoring and controlling power consumption comprising:
2 one or more readers for obtaining power consumption data from one or
3 more electric utility meters; and
4 a computer system for collecting the data from the one or more readers
5 wherein the computer system makes forecasts of electric power consumption
6 based on the data and signals for the control of power consumption by controlling
7 one or more devices that consume electricity.
- 1 51. The system according to claim 50, wherein the computer system is located at the
2 utility company.
- 1 52. The system according to claim 50, wherein the computer system repeatedly
2 computes the forecast.
- 1 53. The system according to claim 50, wherein the computer system controls one or
2 more devices so that usage falls below a predetermined amount.
- 1 54. The system according to claim 50, further comprising a user interface at the
2 computer system wherein the user interface displays indicia related to power
3 consumption to the user.
- 1 55. The system according to claim 54, further comprising means for accessing the
2 user interface from a location remote from the computer system for providing the user
3 input.
- 1 56. The system according to claim 50, wherein the utility company sends alerts to the
2 computer system to reduce power consumption during a crisis situation.

1 57. The system according to claim 50, wherein the utility company communicates
2 with the computer system to obtain data on power usage for billing purposes.

1 58. The system according to claim 50, wherein the utility company instructs the
2 computer system to adjust the consumption of one or more devices.

1 59. The system according to claim 50, wherein the reader, monitors a value displayed
2 by a seven-segment numeric indicator by monitoring the state of seven segments
3 associated with said indicator and determining the value displayed by said indicator by
4 associating each value that said indicator can display with the state of each segment
5 associated with said indicator.

1 60. A method for monitoring the value displayed by a segmented numeric indicator,
2 comprising:
3 monitoring the state of segments associated with said indicator; and
4 determining a value displayed by said indicator by associating each value
5 that said indicator displays with the state of each monitored segment.

1 61. The method according to claim 60, wherein a plurality of segmented indicators
2 together indicate a present utility consumption.

1 62. The method according to claim 60, wherein the state of six segments are
2 monitored and one segment is not monitored, wherein said one segment is selected from
3 the group of segments consisting of: a top-right segment, a bottom-right segment, a
4 bottom segment, a bottom-left segment and a top-left segment.

1 63. The method according to claim 60, wherein the state of five segments are
2 monitored and a bottom segment and one other segment is not monitored, and wherein
3 the said one other segment is selected from the group consisting of: a top-right segment
4 and a bottom-right segment.

1 64. The method according to claim 60, wherein the states of the segments are
2 monitored by an optical sensor.

1 65. The method according to claim 60, wherein the states of the segments are
2 monitored by a detector selected from the group of detectors consisting of a two-
3 dimensional array of detectors and multiple linear array detectors.

1 66. A method for monitoring the value displayed by a segmented numeric indicator,
2 comprising:

3 monitoring the state of five segments associated with said indicator
4 wherein the five segments are not a bottom segment and one other segment and
5 wherein the said one other segment is selected from the group consisting of: a
6 top-right segment and a bottom-right segment; and
7 determining a value displayed by said indicator by associating each value
8 that said indicator displays with the state of each monitored segment.

1 67. A method for monitoring the value displayed by a segmented numeric indicator of
2 a utility meter, comprising:

3 obtaining data by optically monitoring a plurality of segmented indicators
4 which together indicate a present utility consumption; and
5 determining a value displayed by said indicator by performing optical
6 character recognition on the obtained data.

1 68. The method according to claim 67, wherein the plurality of segmented indicators
2 are optically monitored by an integrated array of optical sensors.